

The Significance of Delinquency as a Risk Factor for Adolescent Drug Abuse

Ken C. Winters, Ph.D.

Department of Psychiatry

University of Minnesota, Minneapolis

Abstract

This study addresses the need to empirically test theories about the pathways to drug involvement pertinent to severe-end, clinic-referred youth. In this light, the validity of the conduct disorder hypothesis of adolescent drug abuse, primarily tested to date on normal youth samples, was examined in a drug clinic-referred sample (N = 2582). All subjects met DSM-III-R criteria for either abuse or dependence of at least one psychoactive substance. Based on self-report data, it was hypothesized that a Delinquency factor would account for the most variance in drug use compared to three competing factors (Psychological Distress, Nonconventional Values, and Family Distress). Support for the hypothesis was obtained across sex, age and ethnic groups. The Delinquency factor uniquely accounted for about 50% - 60% of the variance in drug use severity. Confirmatory prediction analysis of individual scales indicated that Peer Chemical Environment and Deviant Behavior (both part of the Delinquency factor) and, to a lesser degree, Psychological Disturbance (part of the Psychological Distress factor), were consistently the most predictive of drug use. The findings are seen as consistent with the viewpoint that delinquency behaviors are important mediators of adolescent drug abuse and, thus, they merit central attention in prevention programs.

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Introduction

The role of risk and protective factors in the development of adolescent drug use has been the subject of an extensive body of research (Hawkins, Catalano, & Miller, 1992). It is generally accepted that these factors include a range of individual, interpersonal, and contextual factors, as well as genetic predispositions. Youth who accumulate multiple risk factors and who experience few developmental assets appear more vulnerable to drug use (Bry, McKeon, & Pandina, 1982; Newcomb, Maddahian, & Bentler, 1986). A contemporary point of view is that multiple trajectories to drug-related consequences are influenced differentially by genetic, interpersonal and intrapersonal factors beginning in the childhood years (e.g., Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Tarter & Vanyukov, 1994). A specific multiple pathway proposition that has generated a great deal of attention is that early determinants of drug involvement include the childhood onset of aggressive and disruptive behaviors. These behaviors contribute to subsequent personal problems, such as academic underachievement, peer rejection, antisocial values, and possible psychological distress, which lead to further progression of conduct problems and eventual drug involvement in the pre-adolescent years. Over time, this early use progresses to a pattern of more serious drug use often preceded by or co-occurring with antisocial and delinquent behavior. Family factors, such as parenting practices, family attitudes and parental substance use, are seen as either buffers or risks to the developmental process. This so-called conduct disorder hypothesis has been replicated across diverse cultures in different levels of SES (e.g., Baumrind & Moselle, 1985; Elliott, Huizinga, & Menard, 1989; Kellam, Rebok, Ialongo, & Mayer, 1994; Maddahian, Newcomb & Bentler, 1988; Shedler & Block, 1990).

For the most part, however, the adolescent drug abuse etiology literature has focused on youth from the general population or school surveys. Extant research contains few adolescents with abuse or dependence symptomatology, rendering incomplete their conclusions as to the role of psychosocial factors in the etiology of clinically significant adolescent drug abuse. Whereas data from school samples are useful for understanding the determinants of initial drug use and general drug use patterns, such data may have limits for informing about the precipitating and maintenance factors pertaining to clinic-referred adolescents. School data are hampered by low base rates of the clinical phenomena and by the fact that health survey data rarely include

definitive diagnostic indicators.

We conducted a cross-sectional study that evaluated the conduct disorder model of drug abuse among clinic-referred, drug-abusing adolescents. While there are obvious limitations when interpreting findings from cross-sectional data, such data have heuristic value for model development. In this context, the present investigation examined the relationship between recent (prior year) drug use and historical psychosocial factors hypothesized to influence drug use behavior in a large drug clinic-referred adolescents. The risk variables considered in the analyses represented four first-order domains as measured by the psychosocial risk scales of the Personal Experience Inventory (PEI) (Winters and Henly, 1989): Delinquency, Psychological Distress, Nonconventional Values and Family Distress. Because the database was sizeable, separate analyses for subgroups defined by gender, age group and ethnicity were conducted.

Method

Study participants (N = 2,582) were drawn from a cross-sectional PEI clinic-referred data base initiated and managed by the Center for Adolescent Substance Abuse (CASA) since 1987. Thirty adolescent drug assessment/treatment facilities nationwide (26) and in Ontario, Canada (4) contributed data. These programs varied in type (private and public, evaluation only, and assessment and treatment), modality (residential and outpatient), and intensity (short-term and long-term).

The independent or predictor variables were based on the 13 Psychosocial scales contained in the PEI. The PEI is a multi-scale, self-report questionnaire that was developed to assist in the identification, referral and treatment of adolescent drug abusers. It consists of separate sections for drug use problem severity and psychosocial risk factors. A detailed description of the procedures employed in developing the psychosocial scales can be found in Henly and Winters (1989). The scales are associated with favorable internal consistency; coefficient alpha for the scales ranged from .74 to .90, with a median of .82. Separate factor analyses for males and females suggested that four factors best characterize the set of scales. Scales with the largest loadings on a given factor, based on iterative principal axis factoring with varimax rotation, were assigned to that factor. As summarized in Table 1, the four resulting factors and their scale assignments are as follows: Delinquency (Uncontrolled, Deviant Behavior, Peer Chemical

Environment, and Sibling Chemical Use); Psychological Distress (Psychological Disturbance and Social Isolation); Nonconventional Values (Rejecting Conventional Values, Absence of Goals, and Spiritual Isolation); and Family Distress (Parent Chemical Use, Parent Dysfunction, and Family Estrangement).

The dependent variable was an aggregate score based on the respondent's reported drug use frequency (DUF) during the last 12 months. The variable score was computed by summing across the 12 drug items, each consisting of a 7-point response scale (1 = never; 7 = 40+ times) (aggregate score range: 7 - 84). The DUF items are essentially the same as those used in the National Institute of Health annual survey of drug use behavior of American high school students (e.g., Johnston, Bachman, O'Malley, 1985), and they are contained in the PEI item booklet.

Data analysis involved using a two-step regression analysis to predict DUF. We first entered the four PEI factors as simultaneous blocks. As predicted by the conduct disorder hypothesis, we expect that the Delinquency factor will account for the majority of unique DUF variance compared to the other three blocks (Psychological Distress, Nonconventional Values, and Family Distress). Then we computed a backward deletion regression in which the thirteen individual scales comprising the factors were entered into the regression in reverse order of significance. Only those variables that significantly contribute to explained variance remain after the deletion process. The backward regression procedure will provide confirmation of the simultaneous regression (we expect significance from all or nearly all the Delinquency scales) as well as identify which individual scales are the most predictive. Within the White group, we computed separate multiple regression analyses for gender and age (younger = 11 - 15-years-old; older = 16 - 20-years-old) groups. Because of sample size considerations, we did not subdivide the other ethnic groups by gender and age (African American, Hispanic, and Native American).

Results

The simultaneous regression analyses indicated that for all age, sex and ethnicity groups, the Delinquency factor accounted for the majority of explained variance for DUF (see Table 2). The proportion of explained variance by this factor was between 44% and 55% (R^2 's = .44 - .55). None of the other three PEI factors individually accounted for more than 3% of the variance, and collectively they typically explained no more than 4% of the variance.

As expected, the findings from the backward deletion regression analyses supported the dominance of Delinquency as a predictor of DUF (see Table 3). Two scales assigned to the Delinquency factor, Deviant Behavior and Peer Chemical Environment, had the strongest association with DUF in all groups (*Beta* weights = .23 - .51) except for the African American group. In the latter group, three Delinquency scales, Peer Chemical Environment, Uncontrolled and Sibling Chemical Use, accounted for most of the DUF variance. Overall, these other PEI scales were statistically identified as significant predictors of DUF (*Beta* weights generally .10 - .20): Psychological Disturbance, Uncontrolled, Negative Self Image, and Rejecting Convention.

When gender, age and ethnicity groups were examined, the pattern of results closely resembled the findings from the total sample. That is, Peer Chemical Environment and Deviant Behavior were consistently the most predictive of DUF. Sibling Chemical Use was notable in that it was a significant predictor of DUF for the African American group.

Discussion

The findings from the study are consistent with the conduct disorder theory of adolescent drug abuse. We consistently found across gender, age and ethnicity groups that a sizeable proportion of variance in drug use level (range of 44% - 55%) was explained by scales from the Delinquency factor. Strong predictors of drug use were Peer Chemical Environment and Deviant Behavior. Admittedly, our findings are not surprising because the conduct disorder developmental pathway model has received widespread support in non-clinic samples (e.g., Baumrind & Moselle, 1985; Elliott et al., 1989; Jessor, Donovan, & Costa, 1991). Nevertheless, the study offers an important extension of the model's validity among clinic-referred adolescents with a substance use disorder. Also, the large sample size permitted us to validate the model among demographically diverse groups. The link we found between delinquency and drug use severity is also consistent with research that documents the high rates of drug involvement among juvenile offenders (Dembo et al., 1990; Winters, Weller & Meland, 1993), as well as recent longitudinal findings that childhood aggression is related to both young adult drug use and delinquency (Brook, Whiteman, Finch & Cohen, 1996).

The study's support of the conduct disorder model has obvious implications for prevention. Our findings point to the importance that prevention efforts may be effective by either targeting

current delinquency behaviors, in particular peer drug use, or by addressing the early signs of delinquency, as manifested by aggression and conduct problems during childhood (Hawkins et al., 1992). There are several promising prevention strategies that focus on disruptive behaviors and related chaotic environments (e.g., August, Anderson & Bloomquist, 1992; Pelham & Murphy, 1986). It stands to reason that such programs should be given serious consideration by schools and communities because they address underlying determinants of delinquency and related conduct problems, the very behaviors that appear to have core influences on drug use involvement. Our data suggest that to achieve maximal impact of comprehensive prevention programming, it is important to allocate resources at ameliorating conduct-disordered behaviors and attitudes. The study findings also confirm the importance that prevention efforts need to 1) target children at young ages, prior to displaying clinically-significant levels of aggressive and antisocial behavior, 2) implement multiple systems (family, school, community) simultaneously in order to broaden the impact of the prevention efforts to all relevant contexts, and 3) be flexible enough to address individual- and family-specific stressors (e.g., daily hassles) that may interfere with reducing risk factors or with promoting protective factors.

Naturally, the study results must be interpreted in light of the limitations of cross-sectional data. Definitive investigations regarding the determinants of youth drug abuse will require the use of more sophisticated designs, such as longitudinal and behavioral genetic studies. Also, the extent of inter-relationship we found between predictor variables and drug use level, all based on self-report, may have capitalized on shared method variance. Finally, because the study used the PEI Psychosocial scales, important risk factors not addressed by it could not be investigated. Such factors include community norms and standards, accessibility to drugs, and exposure to prevention programs.

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